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should not require further spelling out of the terms for clarity purposes. No new matter has been added to the pending claim set.

Double Patenting Rejection

Claims 1-42 have been provisionally rejected under the judicially created doctrine of obvious-type double patenting as being unpatentable over Claims 1-25 of copending application No. 09/764,560. Please note that Applicants contacted Supervisory Examiner Thurman K. Page with regard to this rejection, as the Applicants noted that the original rejection was cited in view of co-pending application No. 09/764,561 (the current application) rather than co-pending application No. 09/764,560. In a phone message from Examiner Page, he has indicated to proceed with responding to the obvious-type double patenting rejection in view of the corrected co-pending application No. 09/764,560. In setting forth this rejection, the Examiner indicated that a timely filed Terminal Disclaimer may be used to overcome this commonly owned application.

Responsive to this rejection, a Terminal Disclosure under 37 C.F.R. 1.321(c) for the above-entitled application which specifies that the Petitioner disclaims the terminal part of the statutory term of any patent granted on the above entitled application which would extend beyond the expiration date of the full statutory term defined in 35 U.S.C. §154 to §156 and §173 as shortened by any terminal disclaimer filed prior to the grant of any patent granted on pending Application Number 09/764,560. Submission of the Terminal Disclaimer thus obviates the provisional obviousness-type double patenting.

Invention Synopsis

The present invention relates to a treatment composition comprising a liquid emulsifiable concentrate of a reactive agent comprising, by weight one or more reactive agents wherein the reactive agent is comprised of one or more reactive groups of the electrophilic, nucleophilic or protected thiol type, a water immiscible solvent, and one or more surfactants. While not being bound to theory, it is believed that the such low energy emulsification with minimal or no agitation by the consumer, e.g., by soft shaking of bottle or suitable container, is achieved via inclusion of specialized surfactants and/or dispersing aides within the liquid concentrate that achieve either ultra-low interfacial tension and/or

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substantial interfacial disruption between the liquid concentrate and the aqueous phase upon dilution with water or a separately packaged aqueous composition.

Surprisingly, it has been discovered that the liquid emulsifiable concentrates of the present invention can achieve self emulsification even upon addition to a substantially thickened aqueous composition to produce a resulting homogenous and viscous emulsion with minimal agitation by the consumer, e.g., via gentle shaking of the bottle or suitable container. This is in marked contrast to conventional thickened emulsions which necessitate considerable energy input that can only be attained by employing high energy processing equipment within a laboratory or a manufacturing plant, e.g., a lightning mixer or agitated vessel. Accordingly, the liquid emulsifiable concentrates of the present invention enable isolation upon storage for acceptable chemical shelf stability while still enabling emulsion delivery with minimal inconvenience to the consumer.

Art Rejections

35 U.S.C. § 103(a)

Claims 1-42 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Gough et al, U.S. 5,525,332, collectively "Gough", and Deppert et al, U.S. Patent 5,087,733, collectively "Deppert". The Examiner has asserted that one of ordinary skill in the cosmetic art would have been motivated to incorporate the polymer of Deppert into the emulsions of Gough, in order to achieve similar conditioning results. Both references teach the claimed polymers are useful due to their chemical affinity to substrates including hair. As to separation of the essential components in a kit form, prior to use the Examiner asserts that such packaging is readily used in the cosmetic art to preserve shelf life.

Gough et al discloses a cosmetic composition, especially for providing a conditioning benefit to hair, incorporating an azalactone-functionalized copolymer consisting of vinyl azalactone and methacryloyl polymethysiloxane monomers. Gough teaches preferred azlactone functionalized materials which are water soluble or soluble in water/alcohol, to enable compositions to be prepared as aqueous or aqueous/alcoholic solutions or emulsions. (Column 7, lines 49-54) or alternatively, the active materials may be soluble/dispersible in organic solvents only, e.g., alcohols, hydrocarbons, etc. to make them particularly suitable for formulation into mousse- or spray- type products (Column 7,

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lines 60-64). As the Examiner has kindly pointed out, Gough is silent as to a nucleophilic reactive group of thiol type reactive agents, as taught in the present invention.

However, Gough is also silent and does not teach the inclusion of a reactive agent within an anhydrous formulation, using an organic solvent that is water miscible, which can be admixed by a consumer with a separate aqueous composition to produce an oil-in-water emulsion, as taught by the present invention. Likewise, Gough is silent with regard to wherein low energy emulsification with minimal or no agitation is achieved via inclusion of specialized surfactants and/or dispersing aides within the liquid concentrate that achieve either ultra-low interfacial tension and/or substantial interfacial disruption between the liquid concentrate and the aqueous phase upon dilution with water or a separately packaged aqueous composition, as taught by the present invention.

Further, Gough teaches the use of an optional emulsifier when delivered as an emulsion to stabilize the emulsified particles of the active, as is well known in the art, and further it may contain one or more surfactants in order to provide detergent action simultaneously with the imparting of cosmetic benefit(s) (Column 9, lines 12-17) including anionic, nonionic, amphoteric and zwitterionic surfactants (Column 9, lines 21-24). However, no mention is made as to the use of these surfactants or the specialized surfactants that are used in order to achieve either ultra-low interfacial tension and/or substantial interfacial disruption between the liquid concentrate and the aqueous phase upon dilution with water or a separately packaged aqueous composition, as taught by the present invention. Gough simply describes the surfactants only as emulsifying agents and to impart detergent action as cited above.

Applicants would like to point out that the present invention has surprisingly developed a system in which a reactive agent present in an anhydrous system can be mixed with an aqueous system in order to form an emulsion without requiring the use of an high energy mixing equipment and conventional process equipment. To date, prior to the present invention, such formation of such an emulsion could only be achieved with the use of high energy processing equipment. The present invention has developed a system wherein the oil-in water emulsion can be formed without adding additional high energy and one in which a consumer can use and form. Clearly, Gough neither teaches or suggest a means to accomplish the present invention's low energy emulsification of a reactive

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agent in a non-aqueous system that is able to self or spontaneously emulsify upon dilution with water or a separate aqueous composition.

With regard to the Examiner's assertion as to the separation of the essential components in a kit form, prior to use, that such packaging is readily used in the cosmetic art to preserve the shelf life, Applicants would like to point out that such use of a kit in the cosmetic art has only been known when using two aqueous solutions i.e. aqueous bleach and aqueous dye. The disadvantage of the using two aqueous solutions in a kit form is that this does not result in a consumer-desired product form of an aqueous emulsion. Accordingly, emulsions that exist within cosmetic products must generally be produced at the point of manufacture, e.g., in a manufacturing plant or laboratory, prior to shipment to the shelves with the resulting emulsion having to be shipped and shelved for many months if not greater than a year prior to use by the consumer. The present invention has surprisingly developed a system for using an anhydrous system (not aqueous) comprising the reactive agent in combination with an aqueous system to form the desired aqueous emulsion form for the consumer.

Deppert discloses processes for conditioning human hair by treatment with selected sulfur containing quaternary ammonium compounds, compositions useful for such processes and novel quaternary compounds useful for the processes. However, Applicants view Deppert as being even less descriptive than Gough in terms of possible formulation adjuncts and providing no motivation for the combination of this reference with Gough. In column 10, lines 44-49, Deppert mentions very briefly a list of common formulation excipients including coloring agents, fragrances, surfactants, buffers etc., and emulsifying agents. However, in Deppert, there is no mention of a self or spontaneous emulsification delivery system as taught & required in the present invention. Further, there is absolutely no mention of a water immiscible solvent within Deppert as well. Therefore, one of skill in the art would not be motivated to combine the teaching of Gough and Deppert in order to arrive at the present invention, in that neither of these reference, either alone or combination, teach or suggest the inclusion of a reactive agent within an anhydrous formulation, using an organic solvent that is water miscible, which can be admixed by a consumer with a separate aqueous composition to produce an oil-in-water emulsion, as taught by the present invention. Further, no mention is made in either Gough or Deppert of the use of the specialized surfactants and/or dispersing aides that achieve either ultra-

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low interfacial tension and/or interfacial turbulence between the oil and the aqueous phase upon dilution with water or a separately packaged aqueous composition. Combining the teachings of Gough with Deppert does not arrive at the present invention.

Therefore, one of ordinary skill in the art would not have been lead to modify the compositions of Gough by adding or blending the teachings of Deppert and successfully arrive at the present invention.

No Prima Facie Case

Applicants respectfully traverse this obvious rejection, as Gough and Deppert do not establish a prima facie case of obviousness because they do not teach or suggest all of the Applicant's claim limitations. None of the references, either alone or in combination, teach the specific composition as required by the present invention. Namely, as the Examiner has pointed out, Gough does not teach the use a nucleophilic reactive group of a thiol type reactive agent of the present invention and further does not teach the use of selected surfactants and water immiscible solvents necessary for achieving the spontaneous emulsification. Deppert, while disclosing the use of selected sulfur containing quaternary ammonium compounds, is also silent with regard to the use of the specialized surfactants and/or dispersing aides that achieve either ultra-low interfacial tension and/or interfacial turbulence between the oil and the aqueous phase upon dilution with water, according to the present invention. Therefore, there would be no motivation to one of skill in the art to combine the teaching of Gough with that of Deppert with any reasonable expectation for success at arriving at the present invention's discovery of a delivery system that will enable the formulation and delivery of reactive agents from an oil-in-water emulsion that is shelf stable and the benefits achieved.

Therefore, there is no prima face case of obviousness since none of the references, either alone or when combined, teach or suggest all of the Applicant's claim limitations.

In light of the arguments presented herein, it is respectfully submitted that the rejection of the claims under 35 U.S.C. § 103(a) be withdrawn.

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Conclusions

Applicants have made an earnest effort to place their application in proper form and distinguish their claimed invention from the references which were applied in the October 29, 2001 Office Action. WHEREFORE, consideration of this application, withdrawal of the rejections under 35 U.S.C § 112 and 103, consideration of the Terminal Disclaimer, and allowance of the pending Claims are respectfully requested.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims:

16. (AMENDED) A treatment composition according to Claim 1, wherein the surfactant is selected from the group consisting of anionic surfactants, cationic surfactants, nonionic surfactants, amphoteric surfactants, zwitterionic surfactants, [Gemini surfactants] surfactants comprised of two long hydrocarbon chains (C₁₂-C₂₂) and two ionic head groups linked by a short spacer and mixtures thereof.
39. (AMENDED) A method of bleaching, coloring, and/or conditioning hair wherein [the] a composition of [the] a first compartment is mixed with a composition of [the] a second compartment immediately prior to applying to [the] amino based substrates.
40. (AMENDED) A method of bleaching, coloring, and/or conditioning hair wherein [the] a composition of [the] a first compartment is mixed with a composition of [the] a second compartment during the application to [the] amino based substrates.